

PATENT APPLICATION  
Serial No. 10/580,852  
Atty. Docket No. 1000023-000108

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit: 1796 :  
In re application of : ONE COMPONENT RESIN COMPOSITION  
CURABLE WITH COMBINATION OF LIGHT  
AND HEAT AND USE OF THE SAME  
Fumito TAKEUCH et al. :  
Serial No. 10/580,852 :  
Filed: May , 2009 :  
Examiner: Robert E. Sellers :

**DECLARATION UNDER 37 CFR § 1.132**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Kei Nagata, hereby declare as follows:

That I graduated from undergraduate department of industrial chemistry of Kanagawa prefectural shoko high school in March 1986, got employed by Mitsui Chemicals, Inc. in April 1986, was assigned to Sodegaura Laboratory in January 2001, and have been engaged in the development concerned with a sealing material for LCD.

That I am one of the named inventors of the invention described and claimed in the above-identified patent application.

That I have read and am familiar with the above-identified patent application and the references cited by the Examiner, i.e., PCT Publication No. 2004/027502 as

represented by Miyawaki et al., U.S. Patent Application Publication No.2006/0009579, Irving et al. Patent No. 4,836,878, and Slocki et al., U.S. Patent No. 4,383,090.

That I carried out the following Experiment to fully gain the Examiner's understanding for the present invention and believe it to be valuable.

#### REPORT OF EXPERIMENT

##### Additional Comparative Example

In the same manner as in Example 1, except that 20 parts of the ingredient (1), 25 parts of the ingredient (2) and 10 parts of the ingredient (6) were used and the ingredient (5) was not used, and the ingredients were blended according to the formulation as in Table 1-1, to obtain a resin composition. Evaluation was carried out in the same manner as in Example 1. The results are shown in Table 2-1.

[Table 1-1]

|  |                                   | Example 1 | Comparative Example 1 | Additional Comparative Example |
|--|-----------------------------------|-----------|-----------------------|--------------------------------|
| <b>Resin Composition</b>                                       |                                   | P1        | C1                    | -                              |
| (1) Epoxy resin  | Solid epoxy resin<br>EOCN-1020-75 | 25        | 25                    | 20                             |
| (2) Acrylic ester and/or methacrylic ester or oligomer thereof | Viscoat #300                      | 30        | 30                    | 25                             |
| (3) Latent epoxy curing agent                                  | Amicure VDH-J<br>Curezole 2MA-OK  | 6<br>1    | 6<br>1                | 6<br>1                         |
| (4) Photo radical initiator                                    | Irgacure 184                      | 1         | 1                     | 1                              |
| (5) Compound having two or more thiol groups per molecule      | 3TP-6                             | 1         | -                     | -                              |
| (6) Partially esterified epoxy resin                           | Synthesis Example 1               | -         | -                     | 10                             |
| (7) Thermoplastic polymer                                      | Synthesis Example 2               | 15        | 15                    | 15                             |
| (8) Filler   | SO-E1                             | 20        | 21                    | 20                             |
| (9) Additive   | KBM403                            | 1         | 1                     | 1                              |

\* In Table 1-1, the units of values are represented by parts by weight.

[Table 2-1]

| Example No.<br>Test items   | Example 1 | Comparative Example 1 | Additional Comparative Example |
|---|-----------|-----------------------|--------------------------------|
| Resin composition   | P1        | C1                    | -                              |
| (i) Viscosity stability   | A         | A                     | A                              |
| (ii) Gel fraction (%) of cured product after heat-curing                                    | 82        | 78                    | 72                             |
| (iii) Adhesive strength (MPa) after curing with a combination of light and heat             | 25.2      | 10.0                  | 20.0                           |
| (iv) High-temperature and high-humidity adhesion reliability                                | A         | C                     | B                              |
| (v) Test on display characteristics of liquid crystal display panel                         | A         | B                     | A                              |
| (vi) Test on display characteristics of liquid crystal display panel in light-shielded area | A         | B                     | B                              |

That the undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

Date 2009.05.26 Inventor Kei Nagata

[Name of Inventor]